AMENDMENTS TO THE SPECIFICATION

Please replace paragraph **[0035]** with the following amended paragraph:

[0035] The digital portion 109 then calculates a scaling value based upon which analog signal is being provided to the amplifier (act 303). This scaling value is preferably calculated such that the resulting scaled analog signal is suitable as an input analog signal to the analog-to-digital converter 104 ~~105~~. The scaled value may be selected so that if the analog signal was previous out of the input range of the converter 104 ~~105~~, it is brought back in range. Even if it was previously in range at the last check, the scaling value may be adjusted so that it is brought deeper into the range.

Please replace paragraph **[0038]** with the following amended paragraph:

[0038] Since the microcode 108 is what caused the adjustment in the scaling value, the adjustment in scaling is rapid. Accordingly, even highly fluctuating signals may be quickly rescaled as appropriate if they approach and exceed the input range boundaries of the analog-to-digital converter. The microcode logic also may properly interpret the digital value, regardless of how the gain (and optionally the current pre-scaling value) was adjusted, since the scaling and digital values are both known. Accordingly, the microcode may be designed to cause the analog signal voltage level to be optimized to the range of the analog-to-digital converter 104 ~~105~~ regardless of how variable the voltage level of the pre-scaled signal is. The analog-to-digital converter 104 ~~105~~ may be a low-bit (e.g., an 8-bit converter) while still providing accurate converted digital values.